Supplementary Appendix

This appendix has been provided by the authors to give readers additional information about their work.

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Appendix for

The Levonorgestrel vs. Copper Intrauterine Device for Emergency Contraception

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1. Brief description of change from original analysis of primary outcome.

The original and final versions of the protocol and statistical analysis plan are available as a supplement to this article at NEJM.org. Here we briefly describe the change in the analysis plan for the primary outcome from the original to the final plan. The primary outcome was pregnancy in the menstrual cycle in which the participant's study IUD was placed. This was to be assessed by a urine pregnancy test one month after IUD placement conducted either at home or in-clinic. Prior to initiating enrollment, we planned to assess the primary outcome by Intention-to-treat analysis (to include all those assigned an IUD method analyzed in the group in which they are randomized to regardless of switching methods) and by a per-protocol analysis (to exclude those who discontinued or switched device types during the first cycle). Conducting both intention-to-treat and per-protocol analyses is consistent with the CONSORT guideline for noninferiority trials.

Following unblinding, we amended the analysis plan in response to two observations. First, 48 participants were missing data for the 1-month urine pregnancy test. For these participants we assessed pregnancy by responses to the 1, 3, and 6-month follow-up surveys after IUD placement, review of clinic notes, and review of medical records for any visits reported at other sites. We reviewed all these sources for any report of a positive pregnancy test result or any mention of pregnancy. Second, we observed a very low response rate for the primary outcome for those who did not receive an IUD. Among the 41 participants (20 assigned to a copper IUD, 21 assigned to a levonorgestrel IUD) who did not receive an IUD, only 7 (17%) provided urine pregnancy test result, and only 16 (39%) provided any primary outcome data. Moreover, we considered the most relevant clinical question to be the pregnancy rate among those women who had an IUD placed. Thus, the final analysis included only those who received an IUD and for whom we had 1-month outcome data. We labeled this analysis a modified intention-to-treat analysis. We also conducted the per-protocol analysis for only the subjects still using the IUD to which they were randomized to when the 1-month pregnancy outcome was reported.

2. Assessments of secondary outcomes

Using responses from the one-month survey, we assessed superiority for IUD discontinuation (including date and reason), satisfaction (using a five-point Likert Scale with options of very unsatisfied, unsatisfied, neutral, satisfied, and very satisfied), and IUD-related pain and bleeding outcomes. To assess IUD-related pain, we asked, "Have you had pain associated with your IUD since insertion?" Those reporting "Yes" rated the level of cramping pain and sharp pain associated with the IUD since the day of insertion, using a 100 mm visual analogue scale (VAS) ranging from 0 (no pain), to 100 (most severe pain). To assess bleeding patterns during the first month of use we queried number of bleeding days (use of $\geq$ two tampons or pads/24 hours), number of spotting days (presence of some blood, used 0-1 pad or tampon/24 hours), and changes in bleeding patterns after IUD placement (less, no change, or more bleeding). The one-month participant survey included an open-ended query of receipt of any medical care in any setting to assess adverse events.

3. Data Collection Timepoints for Primary and Secondary Outcomes for the 12-month Duration of The RAPID EC Study (This Manuscript Features 1-Month Outcomes)

For The Levonorgestrel vs. Copper Intrauterine Device for Emergency Contraception						
Outcome	Intake	1 Month	3 Month	6 Month	9 Month	12 Month
One-month pregnancy rate (primary)		x*	x*	x*		
Timing of IUD insertion relative to time in menstrual cycle	x					
Pregnancy rates in the first year after presenting for EC		x	x	x	x	x
Monthly assessment of vaginal bleeding		x	x	x	x	x
Infections‡		x	x	x	x	x
IUD continuation, expulsion & removals		x	x	x	x	x
Satisfaction with EC method and contraception chosen		x	x	x	x	x
Frequency of unprotected intercourse since presenting for EC		x	x	x	x	x
Use of contraception following presentation for EC		x	x	x	x	x
New diagnosis of any STI‡						
IUD-related complications‡		x	x	x	x	x
Abortion†		x	x	x	x	x
Contraception-related side effects§‡		x	x	x	x	x
Use of a barrier method for STI prevention		x	x	x	x	x

* used to verify one-month pregnancy outcome in 48 participants who did not report pregnancy test result or take in-clinic pregnancy test.
‡ Data on infections, IUD-related complications are captured if reported as adverse events.
† Abortion data is only collected as a participant-reported pregnancy outcome.
§ Contraceptive-related side effects such as pain, cramping, bleeding and spotting captured in all follow-up surveys. All other side effects are captured only if reported as adverse events.

4. Table S1. Detailed Characteristics of Emergency Contraception Users Randomized to the Levonorgestrel 52 mg IUD vs. the Copper T380A IUD Reported at Enrollment

Characteristic	LNG IUD (n=327)	Copper IUD (n=328)
Mean age (years) ± SD	24.0 ± 4.9	23.9 ± 4.6
BMI categories (kg/m^2)		
< 25	168 (51.4)	155 (47.3)
25 - 29.9	70 (21.4)	85 (25.9)
30 or greater	89 (27.2)	88 (26.8)
Education		
High school or less	169 (51.8)	168 (51.5)
Some college	123 (37.7)	120 (36.8)
College degree or higher	34 (10.4)	38 (11.7)
Annual income		
Less than $12,000	133 (40.8)	141 (43.3)
$12,000 - $35,999	151 (46.3)	152 (46.6)
More than $36,000	42 (12.9)	33 (10.1)
Race & Ethnicity		
White/Caucasian	179 (54.7)	190 (57.9)
Hispanic or Latinx	108 (33.0)	98 (29.9)
Black/African American	12 (3.7)	12 (3.7)
Other	28 (8.6)	28 (8.5)
Relationship status		
Married	16 (4.9)	21 (6.4)
Living together or in committed relationship	112 (34.4)	107 (32.8)
Single or actively dating	169 (51.8)	171 (52.5)
Divorced/separated	17 (5.2)	18 (5.5)
Other/did not answer	12 (3.7)	9 (2.8)
Work status		
Unemployed‡	70 (21.6)	58 (17.7)
Full-time†	138 (42.6)	141 (43.1)
Part-time†	92 (28.4)	98 (30.0)
Student	21 (6.5)	29 (8.9)

Other/did not answer	3 (0.9)	1 (0.3)
Intended duration of IUD use		
1-6 months	10 (3.1)	10 (3.1)
Up to 12 months	14 (4.3)	16 (4.9)
Up to 2 years	75 (23.1)	82 (25.2)
Up to 5 years	132 (40.6)	142 (43.7)
Up to 10 years	94 (28.9)	75 (23.1)
Reason for seeking emergency contraception		
Did not use any method at last sex	132 (40.7)	165 (50.5)
Incorrect use of rhythm or withdrawal method	61 (18.8)	68 (20.8)
Condom broke	61 (18.8)	41 (12.5)
Ran out of contraception or missed dose	15 (4.6)	8 (2.5)
Did not plan or was forced to have sex	40 (12.4)	28 (8.6)
Other	15 (4.6)	17 (5.2)

*Mean ± standard deviation or n (%). Percentages may not sum to 100 due to rounding or missing data.
† includes subjects who are not working because they are on sick leave, disabled, homemakers, or retired
‡ Includes subjects who indicated full- or part-time work and student status